Libertarian Alliance

GENETIC CODES:

PRIVATE PROPERTY VERSUS PUBLIC GOODS

Professor Ingemar Nordin

Ingemar Nordin is a professor of philosophy at the department of philosophy at Linköping university, Sweden, his field of research being political philosophy and the philosophy of science. Before that he did graduate studies in maths, physics and philosophy, gained a PhD in philosophy at the university of Lund in 1980, became Associate Professor in Philosophy of Science at the University of Umeå in 1986, and became professor at the department of Health and society in 2001.

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Libertarian Alliance

For Life, Liberty, and Property

Suite 35
2 Lansdowne Row
Mayfair
London
W1J 6HL

Telephone: 07956 472199
Email: admin@libertarian.co.uk
Website: www.libertarian.co.uk

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ABSTRACT

The aim of the paper is to make a case for the protection of genetic codes. It is argued that within a property rights (or "libertarian") approach this has to be accomplished through having a copyright to the physical body parts and biological tissues one owns. It is also argued that copyrights can only be upheld if biological material is transferred or exposed to others in a contractual situation. Therefore extra care has to be taken when things like hair and blood is thrown or given away.

To have a property right in an object means roughly that the owner has the right to use the object, and the right to exclude others from using it. In this sense we can say that a human being has the ownership of his or her body parts. The right to freely use one's body is necessarily limited in various ways, the minimum being the limits set by other persons' rights to use their bodies. However, the full right to exclude others from using one's body parts is usually accepted as uncontroversial within a libertarian ethics if the individual is an adult person.[1] In this paper I will discuss the ownership of genes, and in particular the question whether there can be an exclusion-right to the genetic codes, or genetic patterns in our bodies.

The question touches on the difficult and widely discussed topic of immaterial rights. In what way is it possible to own, and to exclude others from using, abstract objects like ideas, melodies, brands and designs? In a property rights approach to this problem I think it is wise to try to avoid the question of the ontological status of ideas or patterns and focus on the material instantiations of them, i.e. on the ownership of material objects. Is it possible to acquire a certain protection of one's genetic code through the protection that is given by the property right to the material genes in the body? Or is the pattern of a person's genes a public good that others may copy, clone or commercialise?

THE PROPERTY RIGHTS APPROACH

The philosophical literature concerning ownership of the body is so far sparse. Even though there are some authors that write about property rights in general and mention the body here and there,[2] there are only a few treatments of the body in the light of property rights.[3] The ethical conflict that lies at the heart of the discussion is often described as a conflict between "the principle of autonomy" (with its roots going back to Locke) on the one hand and other principles such as "solidarity" and "human dignity" on the other. The latter principles are viewed as originating in a continental Hegelian and Catholic tradition. The same conflict is pictured in Rendtorff and Kemp,[4] where a "European" perspective is said to be in opposition to the "American" property rights view. However, this ethical conflict is in no simple way located along geographical borders between different countries in Europe, or between Europe and the USA. Rather, it is very much an intellectual discussion going on between professional scholars scattered all over the world. Nonetheless the discussion may have a great influence on how laws – both in EU and in the USA – in this area is, or will be, formulated.

However, I will not discuss the legal points here but focus on the basic philosophical questions. There are several ethical issues where a property rights approach comes up with a position of its own, often in opposition to utilitarianism, personalism and religious standpoints. Such is the case concerning questions of self-ownership (or strict autonomy) in health care, drug use, abortion, markets for organ transplantations and, of course, genetic technology. A subtopic in this last category which has not been much discussed is ownership of genetic codes. I will not here take part in the general discussion concerning the ownership of body parts. Rather, I will take the ownership of body parts for granted. What interests me is the following question: Given that a person owns and have the exclusion right to the *physical* genes in his or her body, can an ownership of the genetic *pattern* be defended as well?

To answer this question I will start with the more general topic of immaterial rights and the ownership of ideas. This analysis will then be applied to the problem concerning genetic codes.

IDEAS AND COPYRIGHT

Let me make it clear from the start that the question of immaterial rights is quite controversial, not least from a philosophical point of view. It concerns both the metaphysics (what is an idea?) and the ethics (who, if anyone, has the right to a given idea?).

Philosophy delivers several conceivable answers to the question what an idea is. For example, according to Plato ideas exists in themselves in a world beyond time, space and individual manifestations of them in a person. According to the materialists only matter exists, and ideas are identical with various states of the physical brain. Some prefer an emergentist ontology where ideas are seen as emergent properties of matter: a book is certainly made of matter, but it carries (because of the composition of the letters and words) a meaningful content that exists objectively and which is something more than just printer's ink on paper.

I think that it is possible to avoid some of the problems by focusing on the material side when it comes to property rights. After all, it is much less controversial what it means to own a material thing, like a book or a hard drive. So, let

us as far as possible consider objects and some of the rights connected to them.

Copyrights, like Lockean property rights, have their origin in self-ownership and work. The author of a manuscript has a full ownership of it in virtue of her ownership of the work, ink and paper that she has put into its production. The content of the manuscript – the ideas expressed in it – is protected and excluded from others' use through her full ownership of the physical manuscript. If we are to avoid talking about ownership of the ideas as such, this is the only justifiable protection there is. The writer hands over the manuscript to a publishing company with the (implicit) condition that they must not copy it and print it for sale until a contract transferring certain rights to the company has been signed. When this contract has been signed by both parties the book may be printed and sold to interested readers. This sale in turn is made with certain restrictions as to how the book may be used. Inside the book there is a declaration saying that the copyright belongs to the author and the publisher. What does this mean?

Since it would be impractical to make individual agreements with each book buyer, the declaration concerning copyright gives a general restriction clause. This clause may vary somewhat between countries, but the general message is that the copyright holders keep the right to copy and print the book for sale. The user may have the permission to copy it for personal use, and he may have the permission to copy smaller parts of it as citations in his own book or for education, etc. But these are special exceptions to the main rule that the right to copy still belongs to the author and the publishing company.

Those who have produced the objects, i.e. the individual books, do not sell the full ownership to the buyers but just a part of it. This limits the use-right of the new owner of the book. The producers say in effect: "Here you are; you have now bought a share in this copy of the book. This share allows you to do anything with the copy *except* to copy it." There is nothing strange about such partition of rights. It is like when a bank emits notes and gives the owner the restricted right to use them as he or she pleases *except* to copy them or to destroy them. Or like when a farmer in a free country sells some of his property rights for summer cottages but keeps his rights for hunting and fishing on the same piece of land.

The buying of the book gives the buyer many use-rights: to read it, to use it as a plant press, to stand on it in order to reach a high bookshelf, to destroy it, and so on. But the purchase does not give the buyer the right to copy it by hand, to put it on a Xerox machine or to scan it to a CD. Not even if the buyer changes the physical appearance of the book does the copyright limit vanish. The user may legitimately tear out the pages of the book, spray them with transparent enamel paint and put them on the kitchen floor in reverse order. But if he then takes a photo of the physical result of it all, he still uses the original book for this strange copying process. And this he was not allowed to do according to the contract of sale.

It is the original and complete property right to the objects that also gives the first owner the liberty to sell those use- and exclusion-rights that he or she wants. If the copyright should be abolished then that would be tantamount to a prohibition for authors and publishing companies to dispose freely and peacefully of their product. In other words, it would be a limitation of their property rights.

PATENT RIGHTS

As pointed out by Rothbard,[5] it is difficult, if not impossible, to see any space for patent rights within a libertarian framework. In contrast to copyright, a patent right implies that you have a universal *monopoly* on the idea (or pattern) as such. No one but the original owner, discoverer or inventor is allowed to commercially exploit this idea, not even if others discover or invent the same idea quite independently. Others will not be allowed to use their own creation or discovery as they please.

As mentioned above, there are different views concerning the ontological status of ideas. We may look upon them as eternal and indestructible phenomena, as identical with certain material states in an individual brain, or as emergent properties of material media (brains, books, hard drives) with a certain amount of autonomy after they have been constructed. But I do not see how any of these philosophical theories could give support to the view that the first thinker should have a monopoly.

According to the first ontological theory all ideas exist independently of time and space. They are not like material objects that can be created and transformed, improved or destroyed. Therefore we cannot mix our labour with ideas and thereby make them our property as we are able to do with a piece of land for example. Nor can we make any exclusive discovery of them and hide them from others since they are, at least in principle, accessible to all. Rather, Platonist ideas are like sunsets. Some people look at them and are able to enjoy them whenever they occur. But no one can have the right to stop others from looking at them and enjoying them. Nor is it possible to sell them. What we can do is to sell goods (pictures, for example) and services (tours, for example) that supply access or extra atmosphere to the event. These goods and services can of course be owned. According to this view, ideas are something that we discover rather than create. The discoverer may keep quiet about it if he wishes. He may also choose to convey it to others. But what can be owned – and stopped from being copied by virtue of a property right – is not the idea as such but the commodity (a book, for example) or service (a lecture, for example) that is used to *convey* the idea.

It would be even harder to defend a monopolistic right to an abstract idea from a materialistic point of view. According to materialism ideas are nothing but material properties or processes. There are only objects and material properties and relations, nothing else exists as such. Consequently, all that can be owned is material, and the only thing that can be regulated through the property right is the use of objects. But if two independent inventors happen to produce the same kind of object from the material that they own, and without either of them using the other's invention without permission, there is obviously nothing that prevents them from doing whatever they want with their possessions from an ethical

point of view. All claims that the latest invention materialises an idea that somehow is owned already by the first inventor will appear to be false or pure nonsense, to the true materialist.

The last alternative does not give much room for the monopolistic ownership of ideas either. It is true that in this case we may talk meaningfully both about abstract ideas as such and about the individual creator of an idea. But there is no right to exclude others from having the same idea as the original inventor. Suppose that the improvements made by James Watt of the Newcomen machine in the second half of the 18th century also were independently invented by a Herr Witt in Germany. Suppose also that Herr Witt made his improvements somewhat later than Mr Watt. That means that the principles behind the steam engine in a sense already existed when Herr Witt happened to think of them. The historical fact was that James Watt got a 30-year monopoly on his invention. But from an ethical point of view, can he be the rightful *owner* of the ideas, wherever or however they occur in the rest of the world?

Let me go through the process more carefully. At a certain time point an idea is created in the brain of Mr Watt. He then materialises this idea in the form of a machine. As long as the idea is but a thought it is an emergent property of his brain and Mr Watt naturally owns both his brain and its properties. He may, for example, exercise his ownership by refusing to convey his insights to others. No one has the right to obtain his ideas through forcing him to speak, write or build anything. His ownership of what he has in his head is inviolable. At the same time he also has the right to speak, write and build things in accordance with his thoughts if he wants to. But the same argument must also apply to Herr Witt. Herr Witt, not having seen or heard anything of Mr Watt, also owns the thoughts he has in his brain. His actions – involving building a machine as he himself has planned it – do not involve any thought processes or work of Mr Watt. Nothing is taken from Mr Watt. So, how can Herr Witt be guilty of theft?

Lacking any tenable arguments to the contrary my tentative conclusion is that patent rights are not compatible with an ethics based on property rights. While copyrights may legitimate (as I will argue), patent rights are not.

DISCUSSION

It may sound as if the difference between copyright and patent simply could be described as a difference between constraints on the handling of material objects on the one hand and the protection of ideas on the other. And this difference is real for some ontologies but is not without complications. After all, the purpose of having a copyright in the first place is to protect an idea. The copyright is in general formulated in such a way that the *content* of, say, a book may not be reproduced without the permission of the author.

For example, if Mr Watt describes his invention in words, publishes a description and forbids the copying of this publication, this will not stop any reader from using the description to make a similar steam engine. The reader is not interested in copying the description as such in order to print his own edition but he uses it in order to construct an engine. Or, suppose Mr Watt sells his engines with a prohibition against using them for copying, but that a buyer A sits down and makes a description how the engine works while another person B reads what A has written and reconstructs the work of Mr Watt without even having seen the engine. Neither A nor B has then made any direct copy of Mr Watt's engine.

Obviously, if we want to avoid talking about the exclusive ownership of ideas the copyrights proviso has to be formulated in a more sophisticated way than just in terms of a prohibition against making a direct copy of the object in question. It has to be expressed as a restriction on how the object is used as an *intermediary* of ideas. A copyright may be expressed as a prohibition against using the object as a source, or a tool, for making a copy of the innovation (or a work of art, music, or whatever). Note, however, that such a proviso primarily concerns the object and how it may be used. In contrast to a patent, it does not restrict the use of ideas as such. If the ideas are obtained from other persons and sources the copyright does not apply.

Some would perhaps object that such a copyright infringes on free speech; that when we buy a book or an invention we have to keep quiet about it in the sense that we must not freely distribute its contents or principles to anybody else. And I can agree that there is a limitation on what the buyer can make public, due to the limits on how he may use the object for transmitting ideas. On the other hand, we are always free to invent and distribute any idea we wish *before* we buy something. In general we simply do not have the ideas ourselves until our purchase makes the work of the creator accessible to us. We do not have these ideas, but we are offered those objects that materialise them on certain conditions. Nothing forces us to buy them. So, I do not really see how our rights can be violated simply by accepting the seller's conditions.

However, this puts the focus on one very important aspect of copyrights, namely on how and when such a partly protected object is offered to and *accepted by* the buyer. To accept an object with a copyright implies that one accepts the restrictions that come with it at the same time. If a new concept for a product or the technical principles for a new machine suddenly are exposed to us on the Internet, TV or hoardings, will we then be prevented from using these ideas ourselves? Can the exposition of products with copyright be used as a means to put limits on other people's creativity and entrepreneurship?

A basic principle here must be that the reception of goods or services must be voluntary. In the normal case, this free will is expressed by our paying for such goods or services. But if something is offered freely simply by exposing it to people then the consumer has no possibility of actively accepting or declining. One kind of use, namely to view and understand an idea, will not be part of an active choice. Hence, to use and exploit such an implanted idea can hardly be constricted. It would be a different thing if the reception of the idea involved a positive and voluntary action, such as recording a movie at the cinema, or taking a photo of a painting at an exhibition, where notice concerning the conditions for looking has been explicitly given. Such an action is something more than just looking and understanding.

To implement a copyright there has to be a voluntary agreement or a contractual situation. Suppose Mr Watt chooses between announcing his invention by putting up big posters in the squares of Herr Witt's home town and publishing it in a book protected with a copyright. The difference for Herr Witt is that in the first case he has no option but to see and understand the principles of the engine. Herr Witt may then return to his workshop and start producing engines as he wishes. In the second case Herr Witt makes an active choice to share the thoughts of Mr Watt if he buys the book. And he thereby commits himself to the stated restrictions concerning using the book for reproducing Mr Watt's engine.

Things should be similar when we surf on the internet. What is published there is analogous to what is exposed in the squares. If the creator of a website does want to protect some messages or ideas from being copied, then he must see to it that the surfer becomes aware of and accepts certain conditions in order to view the pages in question. In other cases the content may be freely used.

To determine what is and what is not a contractual situation is not always easy, and it clearly is dependent on social conventions. Sometimes an agreement is made by a handshake and sometimes you need signed and witnessed contracts. In different cultures a binding agreement may be expressed in different ways. So there cannot be a universal way to establish when in fact a situation is contractual. The only thing that can be said from an ethical point of view is that an object is protected by copyright if, and only if, there is a voluntary contractual situation. Or, in more applicable terms: the producer has a copyright if, and only if, the proviso has been communicated in a situation culturally and socially recognised as contractual.

LIBERTARIAN OBJECTIONS TO COPYRIGHTS

There are several libertarians that have argued against not only patents but copyrights as well. I will discuss some of the objections that are relevant to this paper.

Stephan Kinsella[6] has several objections to copyrights. The basic one, as I understand it, is that one cannot own ideas and therefore that one cannot make an ownership claim to them or hinder anyone from copying them. I have tried to avoid this problem by using Rothbard's approach[7] and focus on material objects instead. Consequently, a copyright in this sense is not about ideas (whatever their ontological status) but about restrictions of user rights in objects.

I take it for granted that we can have full ownership rights or partial rights in an object, and that a person with a full ownership right has the right to sell, lend or hire out parts of that ownership. Ownership does not have to be either a full ownership or none at all. There are mixtures. If I lend you a book I give you a reading right for a certain time, but I do not give you the right to draw things in it, or tear out pages from it. In a similar way, if I am the author of a book and sell you all rights to a particular physical copy except a copyright, then you can do anything you want with it except using it for copying. Kinsella writes:[8] "If you take my car, I no longer have it. But if you 'take' a book-pattern and use it to make your own physical book, I still have my own copy. The same holds true for inventions and, indeed, for any 'pattern' or information one generates or has." But the problem is how the pattern can be "taken" without handling my physical book. It does not help that you have your own physical copy in your hands; you have still violated my original user rights of the physical object from which you have taken the "pattern". The same answer is applicable when Kinsella says:[9] "Copyrights pertain to 'original works,' such as books, articles, movies, and computer programs. They are grants by the state that permit the copyright holder to prevent others from using their own property – e.g., ink and paper – in certain ways." But copyrights do not infringe on what you do with your own ink and paper, it only restrict what you can do with the copyright-protected object you have bought. You do not have a full ownership to that object because the seller did not want to sell that to you.

Kinsella makes another argument[10] against those who, like me, want to make a case for copyrights in terms of contractual agreements. If Brown sells Green a mousetrap on the condition that Green does not use it for copying, then that agreement only binds Green and not any third party. If a third person, Black, borrows the mousetrap then he has no agreement with Brown. Why should Black not have the right to make his own copy of the mousetrap? The answer is that it is Green who is answerable to Brown, not Black. Green has broken the agreement with Brown if he does not make Black agree to the conditions of the original sell. It makes no difference if Black functions as a kind of agent for Green. Green has accepted the limited user rights he has acquired in the mousetrap, and when it is used for making a copy then those limits are exceeded. Suppose Green has rented the mousetrap from Brown, on the condition that he does not paint it red. And then comes Black, borrows the mousetrap from Green (who forgets to inform Black about the condition) and paints it red. Who is to blame? It is Green of course, since he has not made sure that the mousetrap was not painted. So, it seems quite clear that even if the original contract does not bind anyone but the two parties, it will have consequences for how the object may be handled by third parties. In this case Green will have to make a new contract with Black or he will have to insist on supervising Black's handling of the mousetrap.

I think Kinsella's objections covers the most important moral aspects which have to be taken into account for making a case in protecting genetic patterns. Undoubtedly, the kind of "copyright" that I use for this purpose is not exactly the same as what is covered in existing law systems. There one often tries to protect ideas rather than material objects, and it is not seen as a contract between buyer and seller. This is unfortunate since such an approach inevitably leads to boundary cases and grey areas, and it has often absurd consequences.

PRACTICAL PROBLEMS

How to uphold a copyright in practice? It would be far beyond the limits of this paper to discuss all the practical problems concerning this. But obviously, sometimes it is possible to uphold this right and sometimes it is not.

The question is: what does it matter? Often you encounter the pragmatic view that any right that cannot be protected simply does not exist; it is "meaningless". But this is a mix-up between principle and practice. A principle may well be legitimate even though there are people that do not care about it and where it is extremely hard to protect it legally. Nor should we mix it up with another ethical meta-principle, namely that "ought implies can", i.e. that an ethical principle must be practically possible to live by. Because it *is* possible to respect a copyright even if no one can stop you from violating it.

The possibilities of protecting copyrights often depend on the technical possibilities of hindering, or tracing and proving an abuse. For example, if Herr Witt anonymously buys Mr Watt's book on steam engines and if Herr Witt later uses Mr Watt's book to build steam engine copies, it could be difficult to prove this violation of the copyright. Maybe it would be possible to prove it if all book buyers were obliged to somehow register their purchase at the publishing company of Mr Watt – roughly like what users of legal computer software are doing today. But even if it was not possible to do that, the fact remains that Herr Witt uses the book in a way that he has not bought the right to. He commits a theft in the same way that any undiscovered thief commits a crime when he steals an object.

The principle of copyright can be lived by. Nothing hinders the consumer from respecting it independently of whether legal measures can be taken against any infringements or not. (The only exception is if the consumer has not been informed properly or if he has not voluntarily agreed to the conditions by accepting the object in a contractual situation.) In fact there are examples of systems that in general uphold a copyright of sorts even though there are no police or courts that bother with it. One such example is scientific discoveries and ideas. In order to use the ideas of another scientist you should take care to give him or her credit for it. This attention to references in footnotes and literature lists is not only for giving the reader a possibility of checking one's sources but is also a kind of "payment" for using the idea. To plagiarise someone's work has seldom – within basic science at least – led to any court process or legal punishment. On the other hand, if the deed is discovered the civil punishment could be very damaging for academic titles and careers.

Similarly, there may be market incitements for companies not to infringe copyrights. The company risks appearing unreliable and not very innovative. If the insight that a violation of copyright really is a kind of theft gets a wider acceptance, then it seems plausible that the civil incitement not to commit such a violation will increase. With the Internet the opportunities for consumers to obtain information concerning the honesty and credibility of a company will also increase. Maybe there will be an informal system of punishment, similar to the academic system, growing world-wide.

Anyway, it is up to the owner of a piece of work to be clear about the copyright when he or she offers it to others. This is so whether there are practical possibilities of controlling it or not. And even if there are no such practical possibilities it is up to the consumers – if they have agreed to the conditions – to respect this right.

APPLICATION TO GENETIC CODES

In several countries there are huge collections of human tissues and blood samples: so-called "bio banks". In Sweden all newborn babies since the 70s have blood samples stored away in such bio banks. A few years ago there was a big discussion about this when the police were allowed to use them in order to trace the DNA of the murderer of foreign minister Anna Lindh. The question was if it was ethically and legally acceptable to use these bio banks for other purposes than they were intended for originally. The original purpose was to use them for scientific research where the integrity of the individuals was protected, but police work was not mentioned.

From a property rights perspective the question is of course: who owns these tissues and blood samples in the bio bank? In Sweden they are legally treated as the property of "the society", i.e. the state. And obviously the state can do whatever it wants with them, at least when the use of them is considered to be in the national interest. From an ethical point of view the person's ownership of his or her genes implies that there cannot be any bio banks without consent. But there may be reasons for giving consent if the bio banks are restricted by explicit and inviolable rules concerning the purpose and handling of the biological material. For example, having blood samples from a young person may help the doctors to make a better diagnosis if the person later in life becomes seriously ill. And in the future, when pharmacogenetics has advanced, the knowledge of a person's genetic pattern will help in adjusting drugs so that they suit his or her individual body better. You may also obtain early warnings of possible genetic diseases. But all this has to be handled with respect for the integrity of the person, which reasonably should include a respect for genetic copyright. Otherwise few would be interested in donating any biological material at all.

What other uses can the state have for the bio banks? Well, suppose that the researchers happen to find a particularly valuable DNA pattern of an individual. They find perhaps that a certain individual is resistant to cancer or to AIDS. Or they find that a person has a particularly good immune system. This is surely something of great interest, not only to the nation but to the whole world. Are these very good consequences sufficient to override the side-constraints of ownership?

From a libertarian point of view this is not so. Actually, the central tenet of a rights based ethics is that consequences are not primary. Whether actions lead to good or bad consequences, the rights of the individual comes first. And if that is the starting point, how much protection would the property rights to the body give to DNA patterns?

The foregoing discussion about immaterial rights gives us some clues. Genetic codes or patterns are like ideas in that they can be viewed from different ontological perspectives. And, as in the case of an idea, it is difficult to argue that a pattern as such can be exclusively owned, i.e. that there can be patent rights to the genetic codes. However, what can be maintained is that the owner of the genes also has a copyright to them. That means that no one but the person has the right to use his or her genes for copying the code; to

clone it or to picture it in order to reproduce it. But it also means that other persons having the same genes – identical twins for example – have the same copyright to their genes and may freely use them for copying. So the protection is limited.

Exactly what can such copyrights protect? As our discussion of Mr Watt's steam engine suggested, a copyright is usually formulated in order to protect an idea. And this protection has to be constructed through restrictions of the handling of material objects. In the same way, genetic patterns have to be protected through restrictions inflicted by the ownership of physical genes. The copyright has to be understood as a restriction on how the gene is used as an *intermediary* of patterns. Of course, just as you may obtain ideas by scrutinizing Watt's engine, you may obtain ideas and understanding by scrutinizing someone's genes. But the important thing is what you do after that. If your observations just happen to inspire you, or give you some piece of new and vital information, to invent something of your own, then there is no problem. But if you use the information to make a copy of the gene, as a part of a commercial product for instance, then you have violated the copyright of the owner. So, copyrights stops copying patterns, nothing more and nothing less.

GARBAGE

Let us now turn to a problem that at first looks as a problem of the future but that actually is here all ready. Today we are not used to being particularly careful with our biological material. I generally get my hair cut without thinking about all that hair I leave behind on the floor in the barber's. And some of it may contain genetic material. I might blow my nose at the train station and throw the tissue paper in the waste basket. Actually, we leave things from our bodies here and there quite often! But all that material may contain our genes, or parts of it, and may be used for all kinds of purposes. The more biotechnology advances the more things can be done with it. How shall we protect our personal genetic patterns today and in the future?

In the discussion above I said that the seller/donator of an object can only keep the copyright if the object is sold or given away in a contractual situation. The copyright can be valid only if the receiver of the object has been notified of, and accepted, it. Otherwise the receiver has full ownership of the object and can use it in any way he or she pleases. Carelessly throwing something away does not obviously place a finder in a contractual situation. Rather, the finder would take it for granted that the person throwing some hair from his brush into the basket thereby disclaims all ownership. Therefore the finder may keep it as his property.

But I also came to the conclusion that what is to be considered as a contractual situation is dependent on social and cultural conventions. Not everything dropped on the ground may be used as the finder wants. If I happen to drop my wallet and leave without noticing it on the street it is still considered to be mine. Neither social convention nor the law gives the ownership to the finder (although he may be entitled to some reward for his trouble in giving it back to the owner). The situation described is not contractual, but it is not considered to be an open exposition either. To "throw" something away seems to involve an intention behind the act, namely to get rid of it, but not necessarily to transfer one's ownership. When I leave hair on the floor in the barber's, or throw tissue paper in a waste basket, my intention is that these things should be destroyed in some way. Likewise, when I have a blood test at the hospital, or give some other tissues for my diagnosis, I do so with the intention that it is for my treatment only. It is definitely not my intention that these tissues should be owned and used by someone else.

These intentions are seldom spelled out, but they are there and are taken for granted. They have transformed into social conventions that are more or less accepted by everybody living in one's society. But living on the verge of a biotechnical revolution, where entirely new things can be done with genes, we probably have to be more concerned with what happens to our biological material. New conventions have to evolve and we have to adjust. For example, cinemas have today explicit notifications concerning the use of cameras and mobile phones on the premises. This puts the visitor in a contractual situation where he or she agrees to the conditions when entering. If I worry about my hair I can make an agreement with my hairdresser that he must destroy my hair without copying its genetic pattern after I leave. Or I can ask him to sweep it up and give it back to me in a bag. Perhaps a new social convention will evolve that says all biological material thrown in public waste baskets must be destroyed and not copied. Anyone making the active choice of picking it up and using it for copying is then violating the copyright to my genes. Or, we have to adjust and stop throwing away biological material in public places where there are no signs concerning the conditions for using the facilities.

GENETICS AND THE MARKET

The ownership of genetic patterns may be questioned. At least there have been objections to the possibility of enforcing patent rights regarding genetic codes, especially if they are naturally evolved in plants and animals. How can somebody own the patterns of *naturally* given genes? How can anyone own, and have the exclusive right to trade in, something which is out there already and that anybody can discover for himself?

From a libertarian point of view, patent rights are out. No one can have an exclusive right to any such discovery. At best one may have a copyright on some object that carries the pattern. Individual plants and animals can be owned by persons. A herb collector may discover a rare flower in the jungle and, provided that no one owns it (the natives for example), she may take it home for laboratory analysis. Suppose that she discovers a very interesting gene that could be commercialised with good profit. She may sell her discovery but keep a copyright. But since she just owns the individual plant there is nothing she can do if someone else also finds the same kind of flower and makes the same discovery.

Suppose that someone else *did* own the plant already. Who owns the pattern? Is it the plant owner or the scientist who discovered the pattern? According to the analysis above no one can own the pattern as such. But the plant owner owns the physical genes, even if he does not know anything about

them or their internal arrangement. A person does not have to be aware of everything that she or he owns. (Compare for example the case where you suddenly inherit everything from a distant relative, including a house that you have never seen. It is still yours, even if you do not exactly know what the house looks like or what is inside it.) The owner of the plant owns the whole structure as well as all its parts. So, what the herbalist can do is to ask for, or buy, the individual plant that she has found. And she can then have the copyright on her discovery in the sense that she has the exclusive right to use the plant and its genes in order to publish or commercialise her insights.

The case is similar if the genetic code is artificially constructed in a laboratory. In this case the code may be unique and nowhere to be found in nature. The product of the construction process, the biological material, is owned by the innovator and producer. So, she has full ownership of the object and may keep the copyright if she sells it or publishes her findings. She may also keep the copyright on the production process for herself.

CONCLUSIONS

Given that we own our bodies, we also own our body parts. No other person is allowed to use our organs, cells or genes unless given permission. As owners we also have the right to use these body parts just as we like, unless it infringes on other people's rights.

In this paper I have argued that the property rights approach to body parts encounters interesting difficulties with respect to genetic codes or patterns. The problem, in short, is that ideas cannot be owned in the same sense as material objects. For example, we cannot have an exclusive right to emergent ideas if each person has a property right to his or her brain. Instead, I have discussed the meaning, scope and limits of copyrights of objects.

The notion of copyright is applicable to material objects as a part of property rights in general. Therefore the owner may reserve that right when he or she transfers the rest of the property right regarding an object to others. A condition for this transaction is that seller/donator and buyer/receiver are in a contractual situation. Therefore, if we want to protect our genetic codes in a libertarian context we have to be careful what we do with biological material such as hair and blood samples. If we do not want our unique genetic patterns to become public goods – for others to clone or publish – we should keep our copyright. And this can be guaranteed only if we do not let things like hair, blood, organic tissues or organs for donation leave our bodies other than in contractual situations.

NOTES

(1) The ownership of body parts concerning children, gravely senile or mentally handicapped individuals is much dependent on the moral capacity of those individuals. This is a far-reaching question and will not be discussed in this paper.
(2) See for example Becker, 1977; MacPherson, 1978; Ryan 1984.
(3) Among them there are Engelhart, 1986; Gold, 1996; H ten Have & J Welie, 1998; Taylor, 2005 and a handful of articles.
(4) Rendtorff & Kemp, 2000.
(5) Rothbard 1970, pp. 71-75.
(6) Kinsella, 2001 and 2013
(7) Rothbard, 1982, p. 123
(8) Kinsella, 2001, p. 22
(9) Kinsella, 2013, p. 22
(10) Kinsella, 2013, p. 33

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